

## REMARKS

Claims 1 through 27 are pending in the application. Claims 7-27 are allowed. Claims 1 – 6 are rejected.

The Examiner is sincerely thanked for the allowance of claims 7-27.

35 U.S.C. § 112, second paragraph rejection. Claims 1-6 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants have amended claim 1 - 6 following the Examiner's helpful remarks. Applicants believe that the above amendment obviate the rejection of claim 18 under 35 U.S.C. § 112, second paragraph. Accordingly, withdrawal of this rejection is respectfully requested.

35 U.S.C. § 102(b) rejection – US Pat. No. 6,113,985 Suscavage et al. The Examiner rejects claims 1 -6 under 35 USC 102(b) as anticipated by Suscavage et al. The Examiner indicates that it would be expected that the polycrystalline gallium nitride formed according to the process of Suscavage et al. would have the properties as recited in Applicants' claims 1-6, and that there is no evidence on record showing that such high density target would not have an apparent density of between about 5.5 and 6.1 g/cm<sup>3</sup>.

Applicant respectfully traverses the Examiner's rejection that Kumar et al. anticipates the invention. To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Varient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987).

Claims 1 – 6 relate to polycrystalline gallium nitride (GaN) with an apparent density of between about 5.5 and 6.1 g/cm<sup>3</sup>, a Vickers hardness of above about 1 GPa, equiaxed grains with an average size of between about 0.01 and 50 µm, and with the atomic fraction of gallium ranges from between about 49% to 55%.

Suscavage et al. discloses using a method in the form of chemical vapor filtration (CVI) to form Group III nitride material targets. In Suscavage's CVI method, a gas phase precursor (Suscavage et al., column 3, line 28) infiltrates a green body (Suscavage et al., column 4, lines 20-25) and decomposes in the pores. Suscavage et al. does not expressly or inherently disclose that the gallium nitride formed to have equiaxed grains having an average size of between about 0.01 and 50 µm as in the amended claims 1-6.

However, in order to purely to expedite examination, Applicants submit a declaration under 37 C.F.R. § 1.132 of Dr. Mark D'Evelyn to further distinguish Suscavage et al. from Applicants' claimed invention of amended claims 1-6. Dr. D'Evelyn's declaration establishes polycrystalline gallium nitride formed according to the CVD process of Suscavage et al. would NOT have the properties as in the amended claims 1-6 of the sintering process of the claimed

invention.

Applicant respectfully requests the reconsideration and withdrawal of the rejection of the claim invention under 35 U.S.C. § 102(b) over Kumar et al.

35 U.S.C. § 103(a) rejection – US Pat. No. 6,113,985 Suscavage et al. The Examiner rejects claims 1-6 under 35 USC 102(b) as being obvious over Suscavage et al.

"To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." "If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious." M.P.E.P. § 2143.03 (7<sup>th</sup> ed., Rev. 1, Feb. 2000).

Claims 1 – 6 as amended relate to polycrystalline gallium nitride (GaN) with an apparent density of between about 5.5 and 6.1 g/cm<sup>3</sup>, a Vickers hardness of above about 1 GPa, equiaxed grains with an average size of between about 0.01 and 50 µm, and with the atomic fraction of gallium ranges from between about 49% to 55%. The Examiner has not explained why the method of Suscavage et al. would provide polycrystalline gallium nitride having properties as in the claimed invention, except through the application of hindsight.

Therefore, for the reasons of record and in view of Dr. D'Evelyn's declaration, Suscavage et al. would not have taught or suggested Applicants' claimed invention to one of ordinary skill. Accordingly, Applicants respectfully request that the Examiner withdraw the 35 USC § 103 rejection over Suscavage et al.

**CONCLUSION.** In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

Respectfully submitted,



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